



# Quality Assurance Requirements for Project Closeout

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# Project Closeout Requirements

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- C-196
  - Materials Testing Documentation
  - Visual Inspection Documentation
  - Materials Certifications
  - Change Order Documentation
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Why are we doing this?

# FHWA Risk Analysis

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- The intent of the review is for the FHWA to determine if UDOT is meeting the requirements of the Quality Assurance Program for Materials, as agreed to in the FHWA Stewardship agreement.
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# Review Scope

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- Review included evaluation of testing performances, quantities, application, and dispute resolutions.
  - Change order processes, materials certification, mix design and non-conforming materials resolutions were also reviewed.
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# 7 Major Issues Found

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- Materials Certifications
  - Paving Materials
  - Personnel Use
  - Local Government Projects
  - Communication
  - Training
  - ***Documentation\****
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# C-196

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- Summary of all non-specification material allowed on project
  - Includes a certification of QA and IA testing
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# C-196 Must Include:

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- Why was the material left in the project
    - Engineering
    - Economics
  - Options evaluated
  - Cost compensation to the project
  - Federal participation (\$\$)  
recommendations
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# C-196 Accompanied By...

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- C-106
    - Individual summary for each exception on C-196
    - Details of issue and options given to contractor
    - Contractor signature and choice of option
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# Testing Documentation

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Acceptance of material incorporated in the work based on:

- process inspection
  - materials use
  - sampling
  - testing and measurement
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# FINAL PROJECT MATERIALS

## CERTIFICATION

PROJECT NO.: \_\_\_\_\_  
 LOCATION: \_\_\_\_\_  
 CONTRACTOR: \_\_\_\_\_

The following data regarding Certificates of Compliance, Price Adjustments and required reports has been reviewed:

- (.) Price Adjustment not required.
- (.) Price Adjustment required for the following non-specification material incorporated into work on this project:
  - 1.
  - 2.
  - 3.
  - 4.
  - 5.
- (.) All required reports, Certificates of Compliance and Item price adjustment computations have been sent to the Region Materials Engineer for review.

This is to certify that the results of the tests on acceptance samples indicate that the materials incorporated in the construction work, and the construction operations controlled by sampling and testing, were in conformity with the approved plans and specifications; and that all independent assurance samples and tests are within tolerance limits of the samples and tests that are used in the acceptance program.

Exceptions to the plans and specifications are explained above (or on attached sheet).

Final Material Certification forwarded to Federal Highway Administration: \_\_\_\_/\_\_\_\_/\_\_\_\_  
 (Federal Aid Non-Solowayville Project)

\_\_\_\_\_  
 Resident Engineer Date

Reviewed by: \_\_\_\_\_

\_\_\_\_\_  
 Date Region Materials Engineer Date Region Construction Engineer

# Minimum Sampling and Testing Requirements (MST)

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- Located on UDOT web under:
    - Internal Groups
      - Project Development
        - Materials
        - Manuals
  - MST Section 1:
    - Materials Type
    - Testing Method/Acceptance
    - Frequency
    - Point of Acceptance
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# MST

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- Testing Method/Acceptance
    - AASHTO Tests
    - ASTM Tests
    - UDOT Materials Manual Part 8
    - UDOT Quality Management Plans
    - Manufacturer's Certificate of Compliance
    - Visual Inspection
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# MST

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- **Testing forms –**
    - **T137 Base Report - Density/Thickness**
    - **T138 Base and Surface Report**
    - **T348 Weekly Embankment Report**
    - **T247 Request for Testing**
    - **Etc.**
  - **Quality Management Plans**
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# UDOT Materials Manual of Instruction (MOI)

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- Located on UDOT web under:
    - Internal Groups
      - Project Development
        - Materials
          - Manuals
  - MOI Section Test Reports
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# Source Acceptance Tests

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- Borrow
  - Granular Borrow
  - UTBC  
HMA Aggregate
  - PCC Aggregate
  - Other select aggregates (riprap)
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# Approved Supplier Testing/Documentation

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- Include Binder Test Reports in Project Folders:
    - Quality Management Plan 509.4.1.3.4
  - Asphalt Emulsions – Qualified Source
    - Quality Management Plan 508.7
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# Approved Supplier Testing/Documentation

- Portland Cement:
  - Verify that the Supplier is Qualified through UDOT's Quality Management Plan 502 (sample form T-282) Fly Ash/Pozzolans
  - Verify that the Supplier is Qualified through UDOT's Quality Management Plan 507
- Qualified Supplier List
  - Internal Groups
    - Project Development
      - Materials
      - Qualified Suppliers

# Approved Supplier Testing/Documentation

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- Hydrated Lime:
    - Verify that the Supplier is Qualified through UDOT's Quality Management Plan 507
    - Test Report: One per project issued by central lab
    - Qualified Supplier List
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# Visual Inspection Documentation

31.y - 122

Project Visual Inspection for Materials Furnished For State and Federal Aid Highway projects	
Project No.:	_____
Project Location:	_____
Contractor:	_____
Subcontractor:	_____
Supplier:	_____
	(Manufacturer or Vendor)
Type and Grade of Materials:	_____
Description of Material:	_____
	_____
	_____
Identifying Marks When Appropriate:	_____
We hereby certify that the above material(s) was visually inspected at the project site prior to incorporation into the project work.	
Technical Inspector	_____/____/____
Resident Engineer	_____/____/____

5/2003

# Visual Inspection Documentation

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- Documentation includes:
    - Details of the item
    - Quantities
    - Project Location
    - Previous Testing
    - Inspector Information
    - Specification sections applicable to the product
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# Visual Inspection Documentation

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- Descriptions of the visual observation and how it relates to the requirements of the specification, i.e., :
    - Gradation
    - Temperature
    - Coating
    - Compaction
    - Segregation
    - Moisture
    - Slump
    - Air
    - Any other Physical Property Identified in the spec
-

“The collection of **test reports** and **Manufacturer’s Certificates of Compliance** for **all** applicable products/materials is the responsibility of the Resident Engineer. All reports and Certificates are to be retained in the project file. A copy of the project file will be submitted to the Region Materials Engineer for review. The Resident Engineer will certify the project based on test results of acceptance samples that indicate the materials incorporated into the project were in conformance with the approved plans and specifications.”

# Materials Certification

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*Currently under review*

- Certification Documentation
  - Inspection Notes for placement of materials
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# Certifications

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- If you had ESP you would have attended the previous session for all the answers
  - Minimum Sampling and Testing Requirements has details
    - Meet the Specs
    - Bind the company
  - Based on originals
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# Inspection Notes for Placement

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- What was placed
    - Description of material/pay item
    - Quantity
  - Similar to visual inspection
    - Must demonstrate that it meets the requirements in the specifications
    - Tie to proper certification in the file
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# Change Order Documentation

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- Description of issue
- Justification (Engineering/Economic)
- Cost Analysis/Federal Participation recommendations
- Options reviewed
- Resolution and success
- Formal Acceptance by Contractor

**BEFORE WORK IS STARTED!!!!!!**

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# The Future

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- FHWA Reviews more intensive
  - UDOT Reviews more frequent
  - Inspector Qualifications
  - Consultant Qualifications
  - Contract Additions
  - Organized Training
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# Resources

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- Howard Anderson, Quality Assurance Engineer  
[handerson@utah.gov](mailto:handerson@utah.gov)  
801-965-4065
  - UDOT Minimum Sampling and Testing Requirements
  - UDOT Materials Manual of Instruction
  - UDOT Materials Website  
Go to *udot.utah.gov/go/materials*
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